

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001243**Date Inspected:** 10-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

<b>CWI Name:</b>	ZPMC- Lee Chen Woo and Sha Zhi			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>

**Bridge No:** 34-0006**Component:** 77m, 89m, 114m and #1 deck mock-ups**Summary of Items Observed:**

On this date, the Caltrans Quality Assurance (QA) representative, John P. Tracy, conducted assessments while on site at Zhenhua Port Machinery Company (ZPMC) for Caltrans Project 04-0120F4-SAS. The following is the detailed review of the following observations:

Bay 1: The closed rib (U-01) for the #2 weld trial was removed and split in half on an off shift. Caltrans Task leader, Mr. Robert Cuellar, tasked the Caltrans representative with cleaning the Partial Joint Penetration (PJP) welds of this assembly. Macro etch samples were identified along both welds by Caltrans personnel, Mr. Dave McClary, Mr. Alfredo Acuna and the Caltrans representative based upon Ultrasonic Testing (UT) inspection data and American Welding Society (AWS) D1.5-2002 visual standard. Samples will be removed at a later date.

**Bay 2:**

89m mock-up had Heat Straightening Report (HSR) active for MUSB-MA23 - Skin C center sections of the vertical longitudinal stiffeners, under HSR1-CT-165. ZPMC Certified Welding Inspector (CWI) Sha Zhi was actively monitoring temperatures for this operation. The Caltrans representative observed temperatures from 400 to 590 degrees centigrade yet a 593 degree Tempilstik brand temperature indicator did not melt. Observed actions appeared to be in accordance with the criteria set forth within the contractual documents.

89m Angle Connection Plates/Web Cross Plates had ongoing thermal operations under WPS-B-T-3211-TC-U5b for the 75mm, American Society of Testing Materials (ASTM) A709 Gr485 components. ZPMC welders Doi Lu (048659) and Wang Zhong Hua (053753) performed the Shielded Metal Arc Weld (SMAW) process welds. Once completed, active ceramic heating pads were in place awaiting welding.

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89m MUSB-MA26-1 and -2, Shear Links, were idle and awaiting upper and lower web to flange and upper and lower stiffener to flange weld out.

89m MA25, Shear Link, was idle and awaiting upper and lower web to flange and upper and lower stiffener to flange weld out.

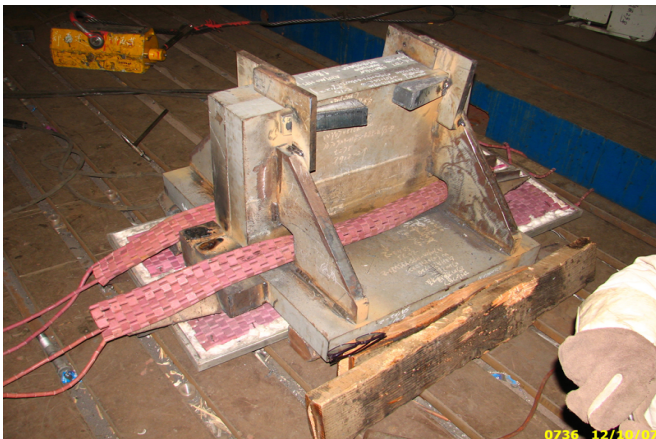
89m MUSB-MA29 Cross Brace had thermal operations ongoing under WPS-B-T-2133. The Caltrans representative monitored average amps: 290 and volts:31.0 for the Flux Core Arc Weld (FCAW) pass. The weld was completed and the component was flipped and rotated. Active ceramic heating pads were returned to the component while awaiting proper preheat and further welding operations.

114m mock-up lower section had Submerged Arc Weld (SAW) operations ongoing for MUSC-MA106 C/C-2A, Plate to Plate attachment weld. The ZPMC SAW welder, Xu Yan (052917), placed the electrode tip along the side of the prepped bevel without flux shielding and gouged out a 7mm X 22mm area along the side wall of the bevel. The discontinuity was removed with carbon arc process and then mechanically ground down to bright metal. The area was not Dry Magnetic Particle (DMT) inspected and the base metal was not built up/repared prior to welding. Notified American Bridge Fabricator (ABF) representative, Mr. Kevin Carpenter, of the findings.

### Bay 3:

On reporting date: 12/09/2007, Seismic Performance Critical Member (SPCM) plate 34A (BP002) was in the process of tack welding operations when the stiffener broke free and laid over on its side thus breaking a 27mm and 10mm piece of the stiffener edge off. ZPMC CWI, Lee Chen Woo, was notified of the incident. Per his previous request the area was ground down and then DMT inspected and accepted by ZPMC Inspector, Cai Xin Xin. Welding operation will resume later today for this component.

Included below are digital pictures that support the observations recorded within this report.



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### Summary of Conversations:

At the completion of the above stated operations, the ZPMC Certified Welding Inspectors, Lee Chen Woo and Sha Zhi, reported that the parameters followed and their noted results were found to be in accordance with the criteria set forth within the contractual documents.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Tracy,John	Quality Assurance Inspector
<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer

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